AMENDMENTS TO THE CLAIMS:

The current claims follow. For claims not marked as amended in this response, any difference in the claims below and the previous state of the claims is unintentional and in the nature of a typographical error.

1. (Currently Amended) A communications receiver, comprising a pulse detection unit configured to detect pulses in a received signal, the pulse detection unit comprising:

a plurality of comparators;

a signal processor;

a sampling time generator configured to generate timing signals indicative of a plurality of sampling time points within a received pulse; and

a reference level generator configured to generate a plurality of reference levels,

wherein each of the comparators is programmable with a sampling time point selected from said plurality of sampling time points and with a reference level selected from said plurality of reference levels, and

wherein the received signal is applied to each of the comparators such that each of the comparators is configured to produce a respective output signal based on a comparison between the received signal level and the selected reference level at the selected sampling time point, [[and]]

wherein the signal processor is configured to detect pulses in the received signal based on the output signals from the comparators and adapted to program the comparators with respective selected sampling time points and reference levels, in order to detect said pulses [[.]] ; and

wherein each of the sampling time points and reference levels are individually selected according to an expected shape, amplitude, or arrival time of said pulses.

2. (Cancelled)

3. (Cancelled)

4. (Previously Presented) The communications receiver as claimed in claim 1, comprising a pre-amplifier configured to pre-amplify the received signal to an appropriate level for comparison with the plurality of reference levels.

5. (Previously Presented) The communications receiver as claimed in claim 1, wherein the reference level generator is adapted to scale the generated plurality of reference levels for comparison with the received signal.

6. (Previously Presented) The communications receiver as claimed in claim 1, further comprising a current reference configured to drive bias currents to said plurality of comparators.

7. (Currently Amended) A method of detecting pulses received in a communications receiver, the method comprising:

generating timing signals indicative of a plurality of sampling time points within a received pulse;

programming each of a plurality of comparators with a sampling time point selected from said plurality of sampling time points and with a reference level selected from said plurality of reference ~~level;~~ levels, each of the plurality of sampling time points and the plurality of reference levels being individually selected according to an expected shape, amplitude, or arrival time of said pulses;

applying the received signal to each of the comparators such that each of the comparators produces a respective output signal based on a comparison between the received signal level and the selected reference level at the selected sampling time point; and

detecting pulses in the received signal based on the output signals from the comparators based on respective selected sampling time points and reference levels programmed into the comparators.

8. (Cancelled)

9. (Previously Presented) The method as claimed in claim 7, comprising pre-amplifying the received signal to an appropriate level for comparison with the plurality of reference levels.

10. (Previously Presented) The method as claimed in claim 7, wherein comprising scaling the generated plurality of reference levels for comparison with the received signal.

11. (Canceled)

12. (Canceled)

13. (Currently Amended) A pulse detection unit capable of detecting pulses in a received signal, the pulse detection unit comprising:

a plurality of comparators;

a signal processor;

a sampling time generator configured to generate timing signals indicative of a plurality of sampling time points within a received pulse; and

a reference level generator configured to generate a plurality of reference levels,

wherein each of the comparators is programmable with a sampling time point selected from said plurality of sampling time points and with a reference level selected from said plurality of reference levels, and

wherein the received signal is applied to each of the comparators such that each of the comparators is configured to produce a respective output signal based on a comparison between the received signal level and the selected reference level at the selected sampling time point, [[and]]

wherein the signal processor is configured to detect pulses in the received signal based on the output signals from the comparators and adapted to program the comparators with respective selected sampling time points and reference levels, in order to detect said pulses [[.]] ; and

wherein each of the sampling time points and reference levels are individually selected according to an expected shape, amplitude, or arrival time of said pulses.

14. (Cancelled)

15. (Cancelled)

16. (Previously Presented) The pulse detector as claimed in claim 13, comprising a pre-amplifier configured to pre-amplify the received signal to an appropriate level for comparison with the plurality of reference levels.

17. (Previously Presented) The pulse detector as claimed in claim 13, wherein the reference level generator is adapted to scale the generated plurality of reference levels for comparison with the received signal.

18. (Previously Presented) The pulse detector as claimed in claim 13, further comprising a current reference configured to drive bias currents to said plurality of comparators.

19. (Previously Presented) The pulse detector as claimed in claim 13, wherein the pulse detector is adapted for use in an ultra wide band communications receiver.

20. (Previously Presented) The communications receiver as claimed in claim 1, further comprising:

at least one antenna; and

receive circuitry configured to perform initial radio frequency processing of the received signal.

21. (Previously Presented) The communications receiver as claimed in claim 1, wherein a number of the plurality of comparators is based on a modulation scheme of the received signals.

22. (Previously Presented) The communications receiver as claimed in claim 1, wherein at least two comparators are configured to provide information about at least one of:

a pulse shape of the received signal; and

an amplitude of the received signal.

23. (Previously Presented) The method as claimed in claim 7, comprising determining at least one of:

a pulse shape of the received signal; and

an amplitude of the received signal.

24. (Previously Presented) The pulse detector as claimed in claim 13, wherein a number of the plurality of comparators is based on a modulation scheme of the received signals.

25. (Previously Presented) The pulse detector as claimed in claim 13, wherein at least two comparators are configured to provide information about at least one of:

a pulse shape of the received signal; and

an amplitude of the received signal.